

(12) UK Patent Application (19) GB (11) 2 371 036 (13) A

(43) Date of A Publication 17.07.2002

(21) Application No 0101086.7

(22) Date of Filing 15.01.2001

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(51) INT CL⁷
A61M 25/00

(52) UK CL (Edition T)
B8C CWA2
U1S S1025

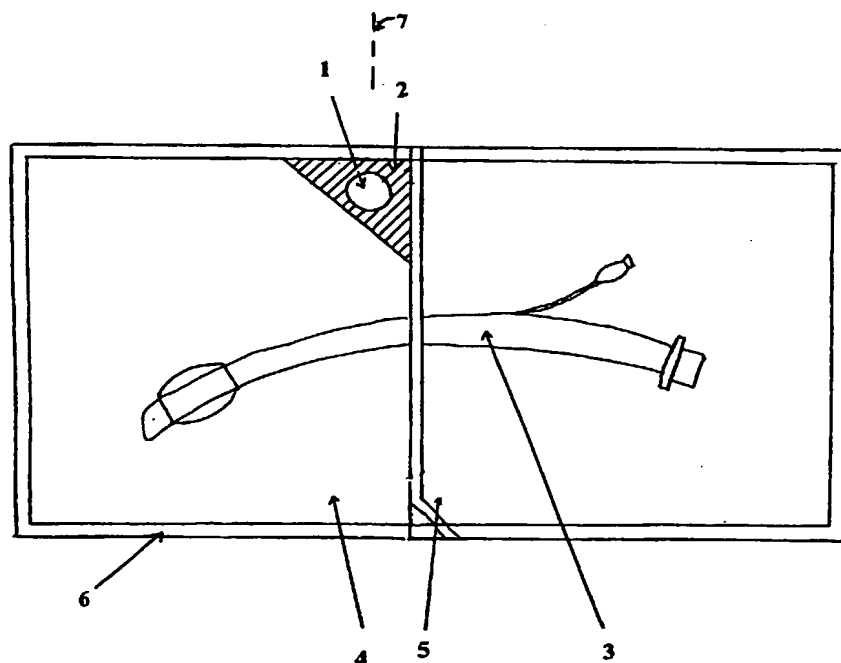
(56) Documents Cited
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(58) Field of Search
UK CL (Edition S) B8C CWA2 CWA3 CWP3
INT CL⁷ A61M 25/00 , B65D 81/32
ONLINE: EPODOC, PAJ, WPI

(54) Abstract Title
Sterile pack containing medical device and lubricant

(57) This invention is a package suitable for holding various tubes or devices 3 used in medical, dental, nursing or veterinary practice that need to be sterilised before use and may require lubrication prior to insertion combined with a container 1 of lubricant. The lubricant can be released into the packet by pressure applied to the container 1 through the package wall. The package may contain foam material 2 that may help to protect the lubricant container from premature rupture and may aid correct lubrication of the package contents. The container 1 may be protected by a removable casing or cover. As shown, the container may be formed in part by walls or seals of the package. It may be designed to release its contents in a chosen direction, particularly towards the device 3. The lubricant may be a water soluble jelly and may have local anaesthetic or other medicinal properties.

FIGURE 1



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FIGURE 1

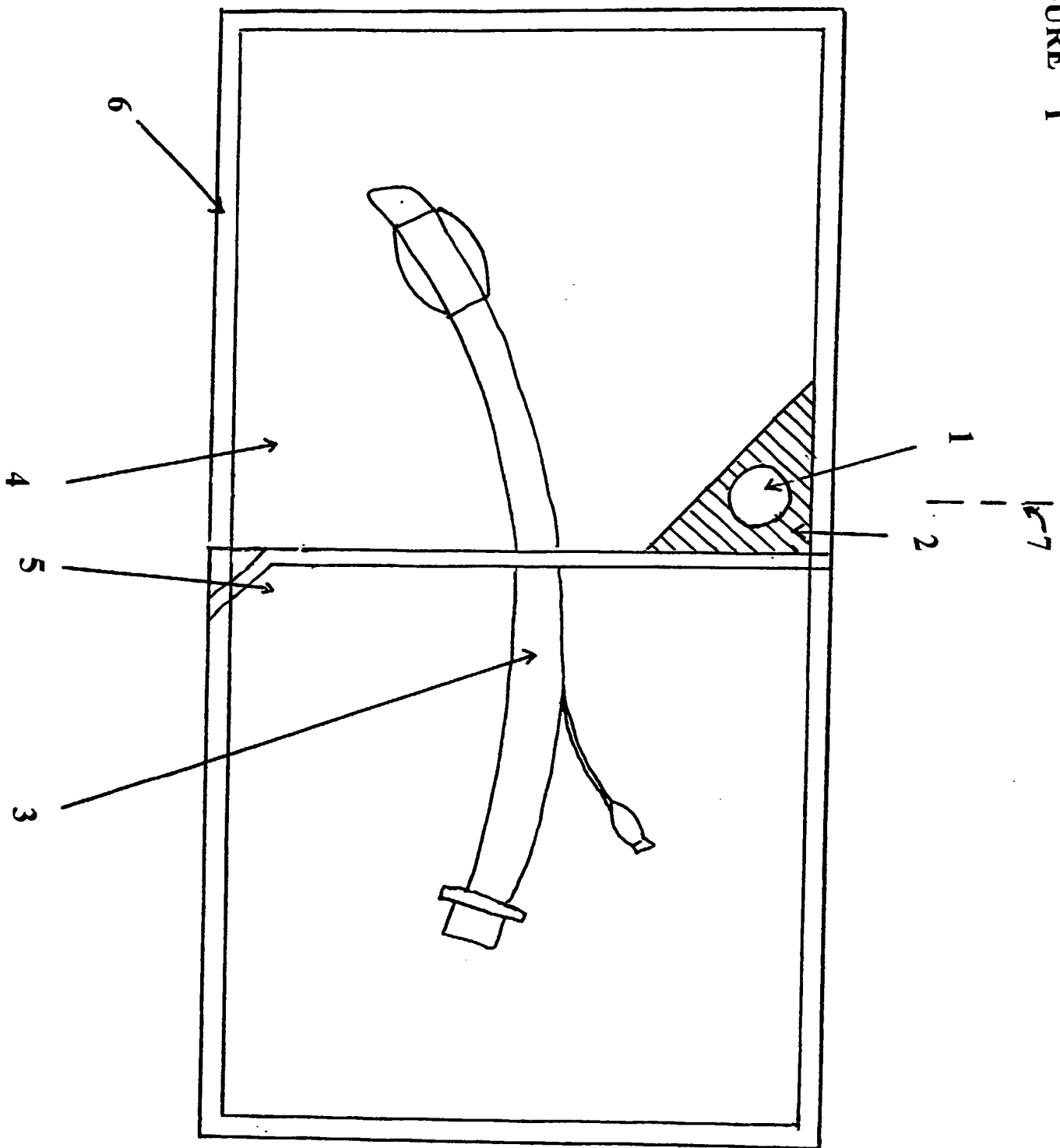


FIGURE 2

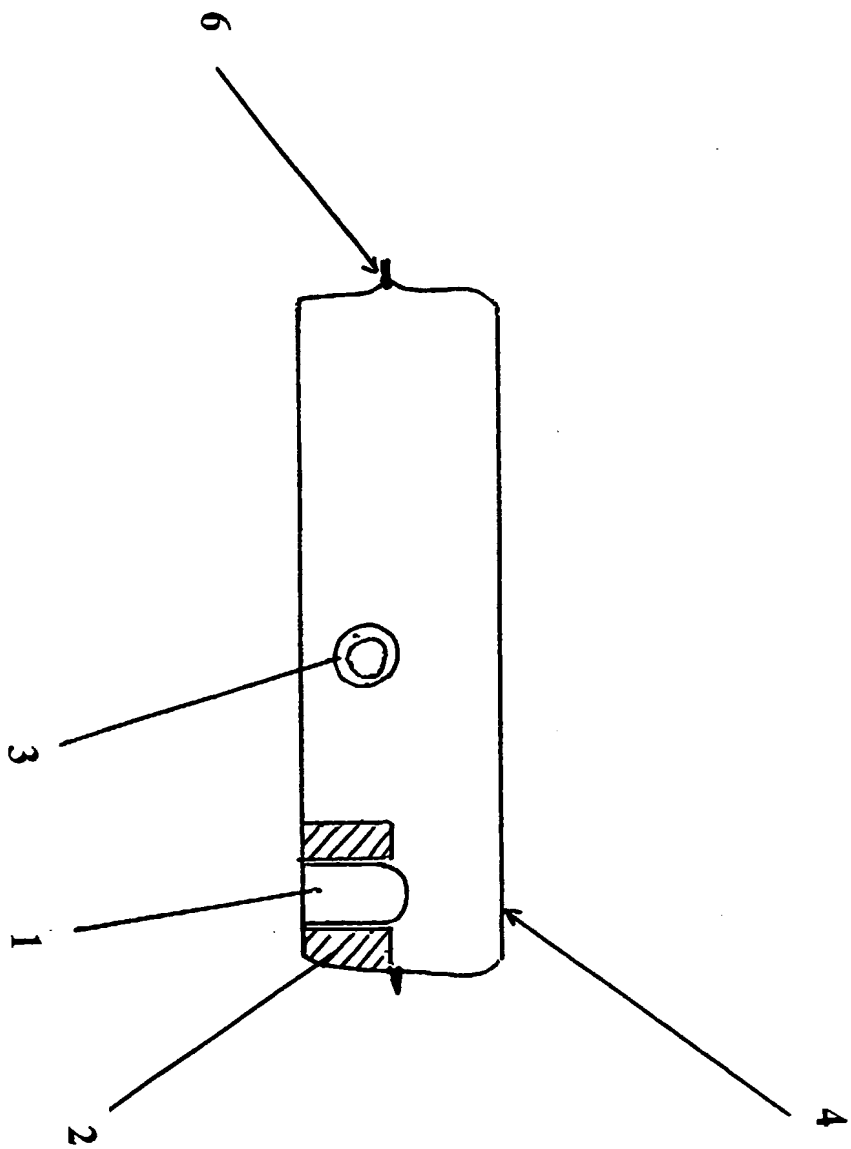


FIGURE 3

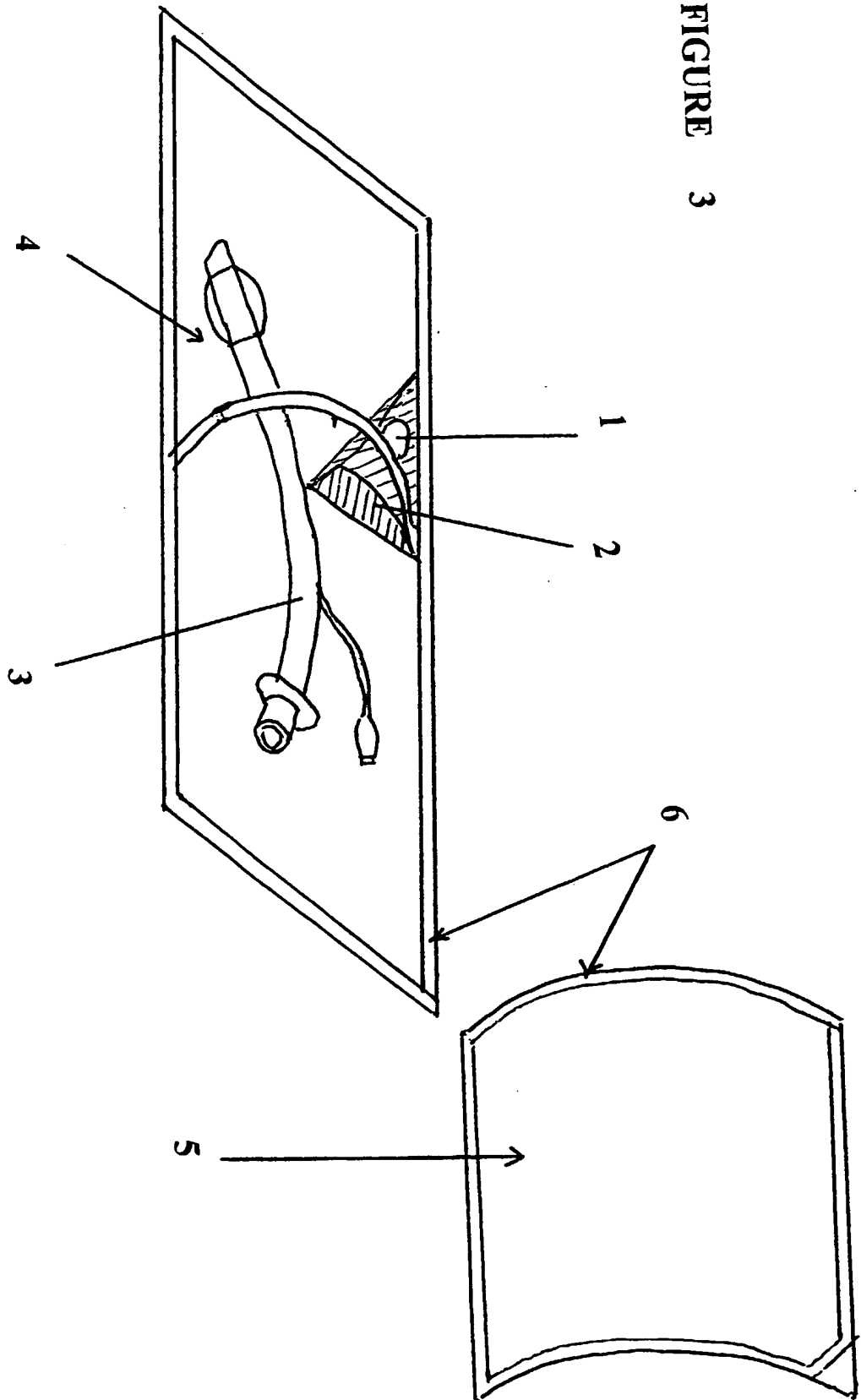


FIGURE 4

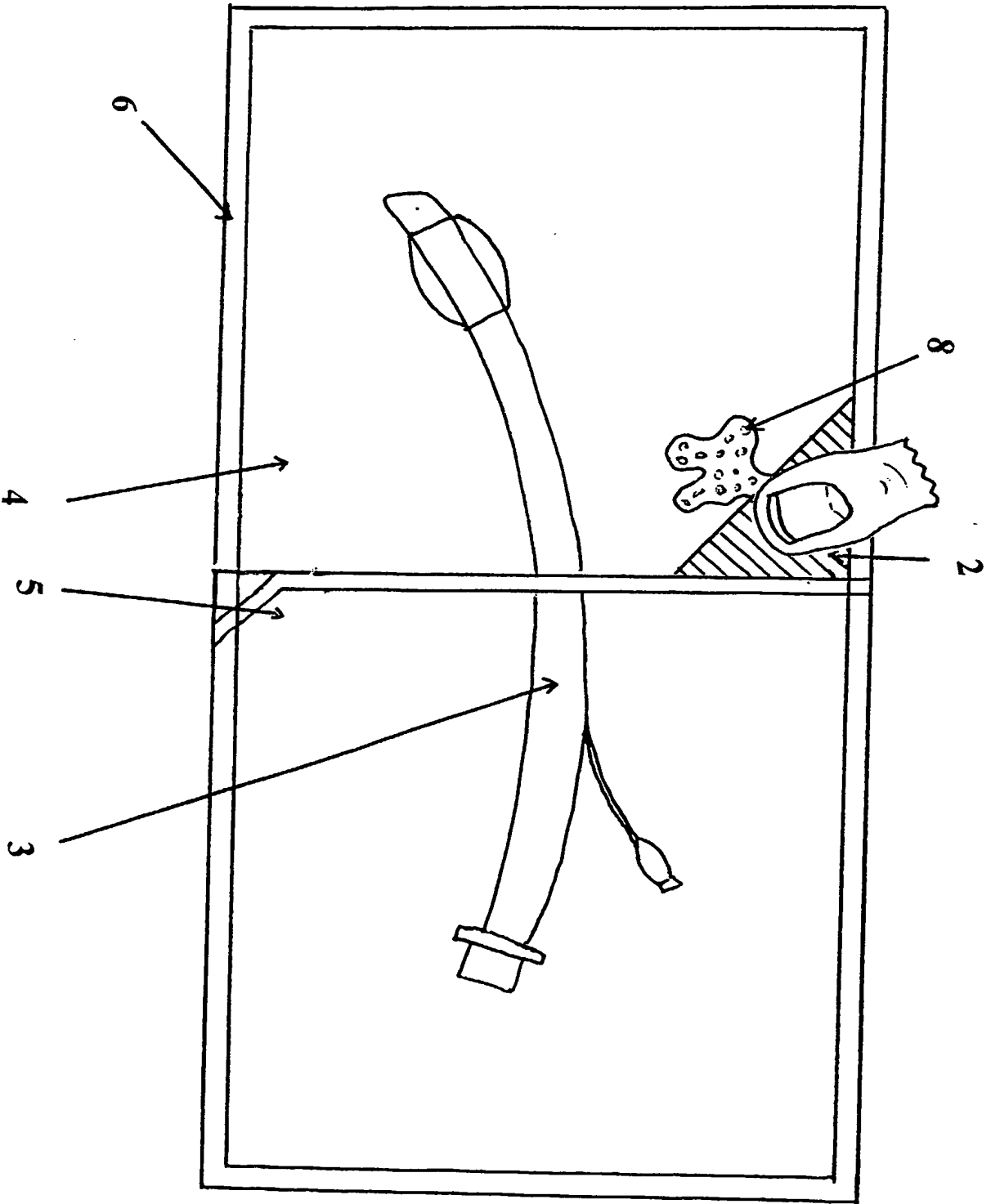


FIGURE 5

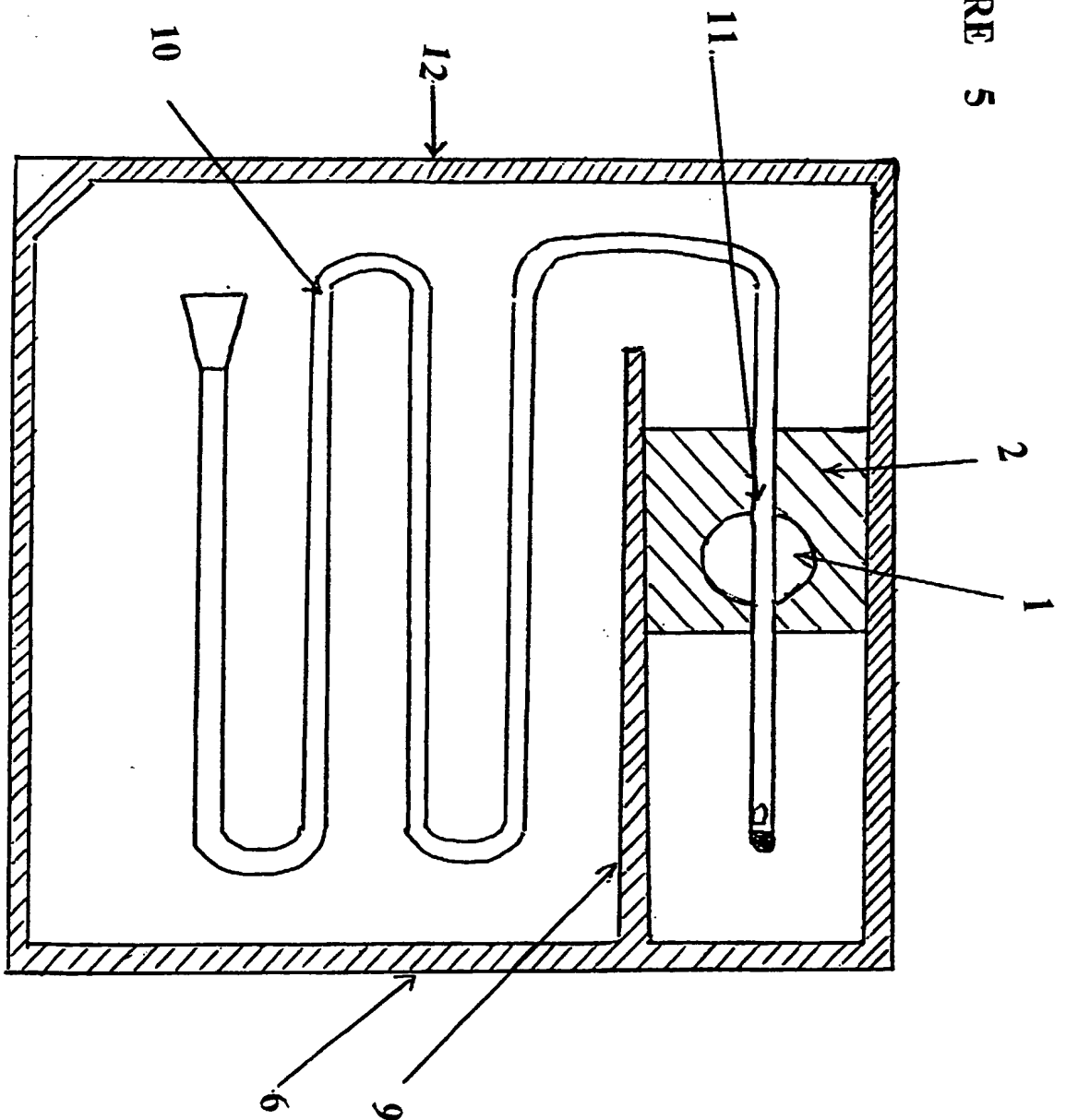


FIGURE 6

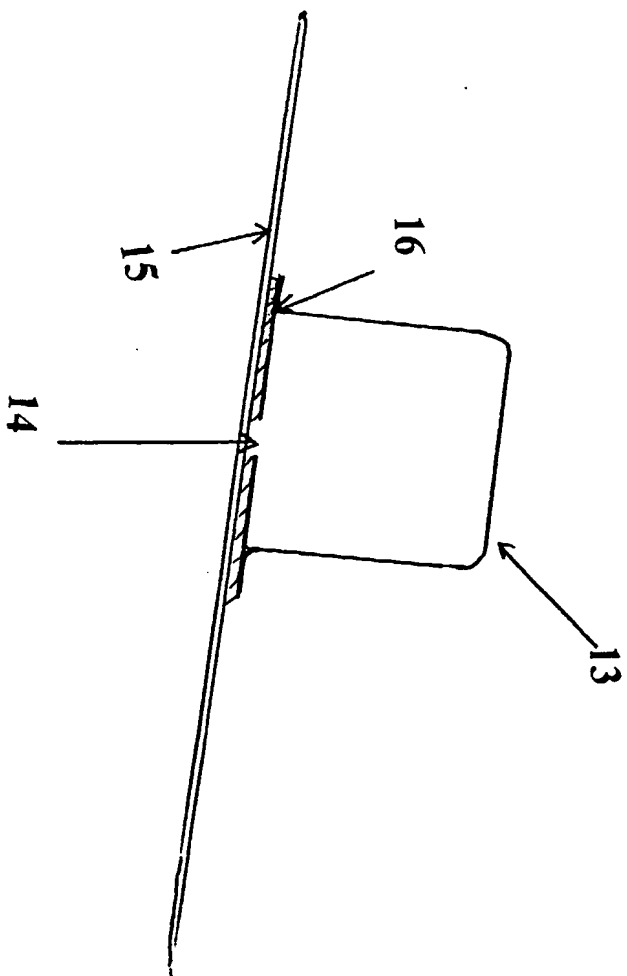


FIGURE 7

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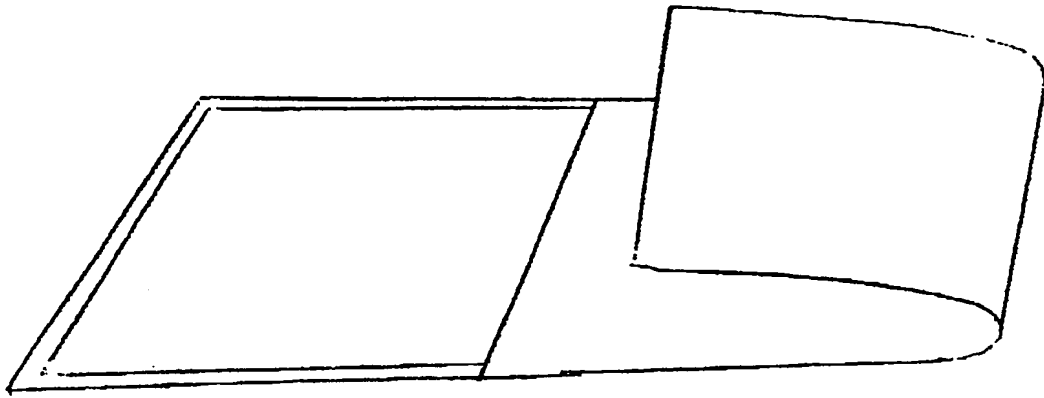
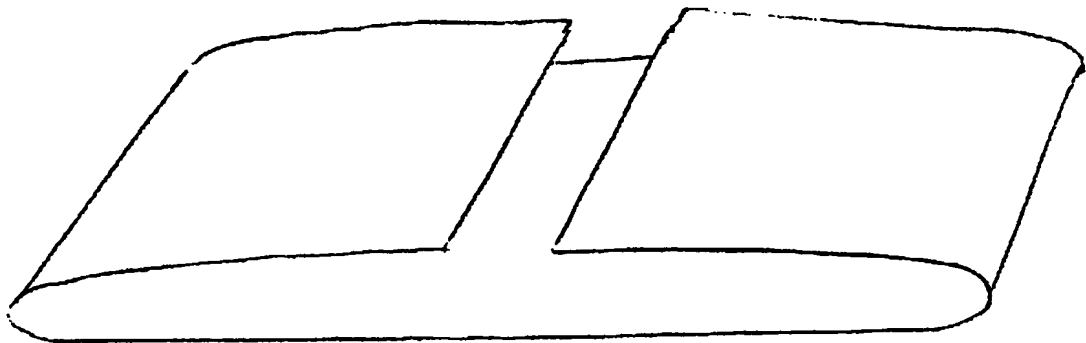


FIGURE 8



THE STERILE PACK

This invention relates to a method of packaging and lubricating various tubes and devices used in medical, dental, nursing or veterinary practice.

Various tubes or devices require lubrication before they are introduced into the mouth, nose or other orifices during routine medical, dental, nursing or veterinary practice.

Often these tubes or devices are supplied in a sealed package which has undergone a sterilisation process to ensure sterility of the package contents. Prior to use this package is opened and the tube or device is removed. It may then be prepared for use, by being cut to length or by being joined to a connector or syringe for example. It is then lubricated, usually with a water-soluble lubricant jelly, to help to make correct insertion and use easier and less traumatic. This is commonly done by wiping the tube or device with a swab, cloth or tissue which has previously had a suitable lubricant placed on it from a multiple use tube or sachet.

There are two main problems with this method preparation and lubrication. Firstly, as soon as the packet is opened and its contents removed they risk bacterial, viral, prion or other contamination which may be passed on to the recipient of the tube or device during use. Unless care is taken, the swab, cloth or tissue and /or the lubricant jelly or its container used during tube lubrication may act as a source of contamination.

Secondly, this method of lubrication may be messy leading to contamination of other items within the local working environment with lubricant.

The objects of this invention include facilitating the hygienic preparation and lubrication of tubes or devices that may be used in medical, dental, nursing or veterinary practice, whilst minimising contamination of the local working environment with lubricant.

Accordingly this invention provides a container of lubricant which may be ruptured so that it releases lubricant into the inside of the sterile package. If lubrication is required the container is ruptured by pressure applied to it from outside the package.

Alternatively, the container may be ruptured into part of the package by pressure applied from outside that part of the package.

The container may be sufficiently difficult to rupture that it prevents premature lubricant release during transport and storage of the package. Alternatively, the container may be protected from premature rupture by a casing or cover which can be removed if lubricant is required. In both cases, if lubricant is required, it will be convenient to rupture the container by pressure applied to it by use of the thumb and / or finger or fingers.

Part of the wall of the lubricant container may be formed by the package.

Alternatively the container may take the form of a bubble, bag or sachet placed or fixed inside the package prior to closure. The container may protect the lubricant from deterioration due to any harmful effects that may be caused by the sterilisation process and will preferably be made from plastic, although paper or a soft metal foil or a combination of these three materials may be used.

There may be a pad or pads of foam material placed or fixed within the package.

These may serve to help distribute the lubricant correctly onto the tube or device. The pad may also help to protect the lubricant container from premature rupture.

The package may also be constructed to a specific pattern that has advantages over conventional packages. These generally consist of a back and front panel sealed together around their periphery. This specific pattern may help to maintain the cleanliness of part or all of the tube or device during package opening, preparation and lubrication. It is preferable that at least part of the packaging is transparent to facilitate viewing and control of the lubrication process. Once the tube or device is finally removed from the package, the package can be immediately disposed of, reducing the risk of contamination of the local environment with lubricant jelly.

A specific embodiment of the invention will now be described by way of examples with references to the accompanying drawings.

FIGURE 1 shows a top view of a package which in this example contains an endotracheal tube.

FIGURE 2 shows a cross section of the package taken through the plane marked (7) in Figure 1.

FIGURE 3 shows a view of the package after a part of the top of the package has been removed.

FIGURE 4 shows how the lubricant may be released into the package by pressure rupturing the container.

FIGURE 5 shows an alternative package designed to hold, in this example, a nasogastric tube.

FIGURE 6 shows a cross section through one example of a lubricant container

FIGURES 7 and 8 show possible methods of packet production.

As shown in figure 1, the invention comprises a thin walled lubricant container(1), which in this example is made of a thin plastic bubble (13) sealed around its periphery to a flat piece of plastic (16) with a central hole (14). The container is filled with lubricant through the hole in its base (14) then fixed to the inside of the package(15) prior to closure (see figure 6). This is surrounded by a pad of foam material (2) which may be used to help spread the lubricant. This foam material also helps to protect the lubricant container from premature rupture. In this example the package contains an endotracheal tube (3) and the front of the package is sealed to the back of the package around its periphery (6). In addition to this the front of the package is made up of two parts sealed together (4) and (5). Pulling one part of the front of the package (5) from the centre outwards can open the package (see figure 3). The front of the package is sealed in a manner that facilitates this by leaving a free corner on sheet 5 which can be easily gripped. Alternatively the back of the package can be folded at one (see figure 7) or both (see figure 8) ends and sealed along both sides to form a package with a join across the front. The endotracheal tube in this example is arranged so that the end of the tube that may require preparation, usually the end which lies furthest from the patient when in use, lies under the part of the package that is opened first. At the same time, the part of the tube that may require lubrication remains largely protected from contamination behind the remaining front portion of the package. Alternatively, the entire front of the package could be removed, the part of the tube that requires lubrication being protected by an additional sheet of material, preferably transparent plastic. In this circumstance the front portion of the package may protect the lubricant container from premature release. The size of the opening into the part of the package containing the part of tube that requires lubrication may be reduced by sealing the front and the back of the package together

or by the use of a foam pad or strip. If lubrication is required, the lubricant container can be ruptured, in this example by pressure, manually applied to the container through the package wall(see figure 4). The lubricant (8) is expelled into the package and onto the tube or device. The lubricant container may be deliberately made to be weak in a particular place so that when it is ruptured it releases its contents in a particular direction, for example onto foam material that may be in the package. The tube is then ready for insertion without ever having been completely removed from the package. Tubes that require no preparation may be lubricated whilst the package is completely closed.

Figure 5 shows how the packaging may be arranged to facilitate lubrication of the correct part of a longer tube, in this example a nasogastric tube(10). The package is again made up of a front and back sheet sealed together around its periphery (6). It is also partially divided into two parts, in this example by the seal between the front and back sheets marked (9). Alternatively, foam may be used to isolate the part of the tube or device that requires lubrication. Only the part of the tube that requires lubrication(11) lies in the part of the package that contains the lubricant container(1) and foam material(2). The package would preferentially be opened along side (12). The lubricant in the lubricant container will usually be in the form of a water soluble lubricant jelly. In certain circumstances it may also contain a local anaesthetic agent or other medicinal compound.

CLAIMS

- 1 A package that can be used to keep tubes and devices used in medical, dental, nursing and veterinary practice sterile which also contains a container which holds a suitable lubricant. The container can be ruptured to release the lubricant into the packet and thus onto the tube or device when required. The container can be conveniently ruptured by pressure applied to it from outside the packaging.
- 2 A package as claimed in Claim 1 where the container will be sufficiently difficult to rupture that it prevents premature lubricant release during transport and storage of the package whilst being conveniently ruptured by pressure applied indirectly to it by the thumb and / or finger or fingers through the packaging wall.
- 3 A package as claimed in Claim 1 where the container will be protected from premature rupture by a casing or cover which can be removed if lubricant is required.
- 4 A package as claimed in any preceding claim in which the lubricant container is protected or partly protected from unintentional rupture by a piece of foam material.
- 5 A package as claimed in any preceding claim in which the foam material may be used to help distribute the lubricant correctly over the tube or device.

- 6 A package as claimed in any preceding claim in which the lubricant container contains a water soluble lubricant jelly.
- 7 A package as claimed in any preceding claim in which the lubricant container holds a lubricant with local anaesthetic or other medicinal properties.
- 8 A package as claimed in any preceding claim in which the lubricant container is designed to release its contents in a particular direction.
- 9 A package as claimed in any preceding claim in which the lubricant container helps to protect the lubricant from deterioration due to harmful effects caused by some methods of sterilisation.
- 10 A package as claimed in any preceding claim in which the lubricant container is entirely or partly made out of the package wall or its seals.
- 11 A package as claimed in any preceding claim in which the packet is designed in a manner which reduces the risk of contamination of the package contents during their preparation prior to use.



Application No: GB 0101086.7
Claims searched: 1-11

Examiner: Stephen Smith
Date of search: 20 June 2001

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): B8C(CWA2, CWA3, CWP3)

Int Cl (Ed.7): A61M 25/00; B65D 81/32

Other: ONLINE: EPODOC, PAJ, WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 1465544 (INTERNATIONAL PAPER) lines 41-67 of page 2	1, 2, 8, 11
X	EP 0677299 A1 (VIA LOG) Figure 7, lines 17-41 of column 9	1, 2, 11
X	US 4269310 (USON) lines 31-48 of column 1, lines 21-26 of column 2	1-3, 10, 11
X	US 3556294 (WALCK) whole description	1-3, 6, 11

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